

**Claims:**

1. A back up method for a plurality of computers, said plurality of computers comprising:

5 a back up computer device, said back up computer device comprising a data processor, a communications link for communicating with other said computers, and a bulk data storage device for storing back up data of said other computers;

10 a plurality of client computers, each said client computer comprising at least one data processor, and a data storage device having a client data storage area,

15 wherein said back up computer operates to back up data stored in said client data storage areas of each of said plurality of client computers, said method comprising the steps of:

maintaining a list of files on a said client computer allocated for back up;

20 maintaining a total size data describing a size of each said listed file;

25 determining a total file size data describing a total size of said listed files of said client computer;

comparing said total file size data with a pre-determined size limit; and

determining whether to back up said client files or not, depending on a result of said comparison between said total file size data, and said predetermined size limit.

30 2. The method as claimed in claim 1, wherein said step of determining whether or not to back up said client data comprises:

comparing said total file size data with a first file size limit;

if said total file size data exceeds said first file size limit, generating a warning message indicating said first file size limit is exceeded; and

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allowing back up of said data files within said file size limit.

3. The method as claimed in claim 1, wherein said step of determining whether or not to back up said client files comprises:

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comparing said total file size data with a second file size limit data;

if said total file size data exceeds said second file size limit, then prohibiting back up of said client files.

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4. The method as claimed in claim 1, wherein said step of determining whether or not to back up said client files comprises:

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comparing said total file size data with a second file size limit data;

if said total file size data exceeds said second file size limit, then prohibiting back up of said client files; and

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generating a warning message, that said second file size limit is exceeded.

5. The method as claimed in claim 1 comprising the process of:

maintaining a quota list, listing a plurality of files stored in a backed up region of said client computer, wherein for each said file, there is stored a size data describing a size of said file.

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6. The method as claimed in claim 5 further comprising the step of:

for a client computer, summing a total of all said file sizes to obtain a total file size data of files stored in a backed up region of said client computer.

5           7.       The method as claimed in claim 5 further comprising the process of:

for said client computer, storing a difference list, listing differences between files backed up during a previous back up process, and files currently stored in a  
10 back up data storage region of said client computer.

8.       A method of storing back up data of a plurality of client computers, on a back up computer, said method comprising the steps of:

15       receiving a first file set from a first said client computer;

storing said first file set on said back up computer;

20       maintaining a database entry describing said first file set;

receiving a second file set from a second said client computer;

25       comparing said second file set of said second client computer with said first file set of said first client computer;

for any files of said second file set which are identical to individual files of said first file set, allocating in said database pointers to data locations of said common files already stored; and

30       storing said files of said second file set which are not identical to files of said first file set in said back up computer.

9. A method of operating a back up computer, said back up computer comprising:

at least one data processor;

a data storage device for storing a plurality of back up files;

an interface device; and

a back up management application for managing storage of data in said data storage device;

said method comprising steps of:

allocating a plurality of back up data storage areas, for storing data received from each of a plurality of client computers;

receiving a total file size data from each of a plurality of client computers, each said total file size data representing a total file size at said client computer of files backed up to said back up computer; and

for each said client computer, transmitting to said client computer a file size limit representing a limit of total file size on each said client computer, for which back up of said files is permitted.

10. A method of operating a client computer, said client computer comprising:

at least one data processor;

a data storage device for storing client files, said data storage device having a backed-up data storage area from which files may be sent for back-up;

an interface device; and

5 a back-up management agent for managing back-up of data from said backed-up data storage area;

said method comprising the steps of:

10 creating a list of files resident in said backed-up data storage area;

for each said file on said list, storing a size data describing a size of said client file;

15 summing said plurality of file sizes to obtain a summed file size total; and

comparing said summed file size total with a size quota limit.

20 11. The method as claimed in claim 10, wherein said size quota limit comprises a first size limit; and

said method further comprises the step of, if said summed total file size data exceeds said size quota limit, generating a warning message at said client computer, warning that said first quota limit is exceeded.

25 12. The method as claimed in claim 10, wherein said size quota limit comprises a second quota limit; and

said method further comprises the step of:

30 if said summed file size data is greater than said second quota limit data, prohibiting back-up of at least one file in said client backed-up data storage area.

13. The method as claimed in claim 10, further comprising the processes of:

5 comparing the list of said current files on said client backed-up data storage area with a previously generated list of files representing a status of files in said backed-up client area at a previous time; and

10 identifying files which have changed between said current file list and said previous file list;

generating a difference list listing said files that have changed between said current file list and said previous file list.

14. A client computer comprising:

15 a data processor;

a data storage device having a data storage area reserved for files which are subject to a back-up process;

20 an interface device; and

25 a back-up management agent which operates to manage back-up of files in said backed-up data storage area by sending said files via said interface device, wherein said client management agent operates to receive a first quota limit from an external source, said first quota limit describing an amount of data storage capacity which said client computer is permitted to maintain in said backed-up data storage area.

30 15. The client computer as claimed in claim 14, wherein said client management agent operates to receive a second quota limit from an external source, said second quota limit describing an amount of data storage capacity

which said client computer is permitted to maintain in said backed-up data storage area.

16. The client computer as claimed in claim 14, wherein said client management agent operates to:

maintain a quota list, describing an amount of data allowed to be stored in said backed-up data storage area;

10 a file list describing one or more files currently stored in said backed-up data storage area;

15 a previous file list, describing a plurality of files previously stored in said backed-up data storage area immediately prior to a last back-up operation carried out by said client management agent; and

a difference list storing data describing differences between files on said new file list, and files on said previous file list.

17. A method of performing back-up of data on a back-up computer, said method comprising the steps of:

20 each time a back-up operation of said client computer is initiated, determining a total size of all files of said client computer to be backed up, and  
25 determining whether performance of said back-up would cause a first predetermined quota limit to be exceeded;

determining if performance of said back-up would cause a second predetermined quota limit to be exceeded;

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if it is determined that performance of said back up would cause said first predetermined quota limit to be exceeded, but said second predetermined quota

limit not to be exceeded, then proceeding with said back-up, and generating a warning signal warning that said first predetermined quota limit is exceeded; and

5 if performance of said back-up would exceed said second predetermined quota limit, then prohibiting said back-up, and generating a warning signal that said second predetermined quota limit would be exceeded.

18. A method of operating a client computer, said client computer comprising;

10 a data storage device for storing client files, said data storage device having a back-up data storage area from which files may be sent for back-up; and

15 a back-up management agent for managing back-up of data from said backed up data storage area;

said method comprising the steps of:

20 upon initiation of a back-up process;

maintaining a quota list, said quota list comprising a list of files in said backed-up area, which were backed up during a previous back-up operation;

25 performing a back-up operation on said files stored in said backed up data storage area;

30 after said back-up operation, modifying said copy quota list to list a plurality of files actually backed up by said back-up operation.



19. The method as claimed in claim 18, further comprising the steps of:

producing a modified quota list to comprising a list of files currently in said backed up data storage area; and

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determining from said modified quota list, whether performance of a back up operation is within a quota limit.

20. The method as claimed in claim 18, wherein said step of producing

10 a modified quota list comprises:

generating a difference list, said difference list listing details of files which are difference between a current content of said backed up data storage area, and said quota list.

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